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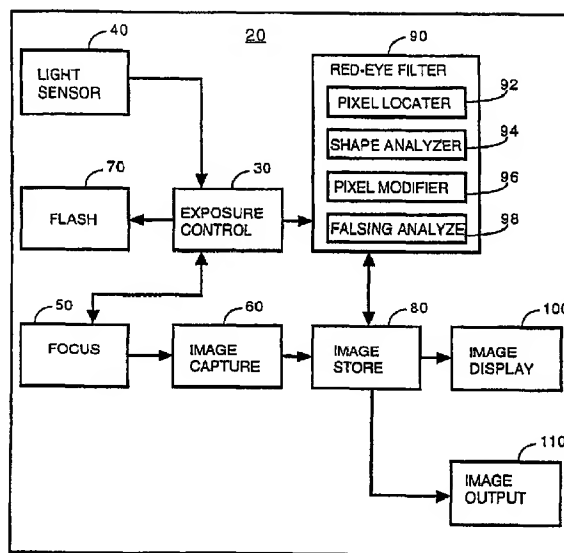
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(54) Title: OPTIMIZED RED-EYE FILTER METHOD AND APPARATUS INVOLVING SUBSAMPLE REPRESENTATIONS OF SELECTED IMAGE REGIONS



(57) Abstract: A digital camera has an integral flash and stores and displays a digital image. Under certain conditions, a flash photograph taken with the camera may result in a red-eye phenomenon due to a reflection within an eye of a subject of the photograph. A digital apparatus has a red-eye filter which analyzes the stored image for the red-eye phenomenon and modifies the stored image to eliminate the red-eye phenomenon by changing the read area to black. The modification of the image is enabled when a photograph is taken under conditions indicative of the red-eye phenomenon. The modification is subject to anti-falsing analysis which further examines the area around the red-eye for indicia of the eye of the subject. The detection and correction can be optimized for performance and quality by operating on subsample versions of the image when appropriate.

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## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/044070 A1 (FUERSICH MANFRED ET AL) 6 March 2003 (2003-03-06) * Fig. 1a, paragraphs '0025-0029, 0035, 0040-0046! *	1-49
X	US 6 278 491 B1 (WANG JOHN Y. A ET AL) 21 August 2001 (2001-08-21) * abstract, Figs. 1-6, cols. 4-7 *	1-49
X	US 2002/136450 A1 (CHEN TONG-XIAN ET AL) 26 September 2002 (2002-09-26) * Figs. 3,4, paragraphs '0036-0039, 0047!, claim 6 *	1-49
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>JOFFE S ED - INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS: "Red eye detection with machine learning"</p> <p>PROCEEDINGS 2003 INTERNATIONAL CONFERENCE ON IMAGE PROCESSING. ICIP-2003. BARCELONA, SPAIN, SEPT. 14 - 17, 2003, INTERNATIONAL CONFERENCE ON IMAGE PROCESSING, NEW YORK, NY : IEEE, US,</p> <p>vol. VOL. 2 OF 3,</p> <p>14 September 2003 (2003-09-14), pages 871-874, XP010670596</p> <p>ISBN: 0-7803-7750-8</p> <p>* Fig. 2, sections 2, 3 *</p>	1-49
X	<p>US 5 432 863 A (BENATI ET AL)</p> <p>11 July 1995 (1995-07-11)</p> <p>* Figs. 2-4, col. 7 line 27-col. 8 line 57 *</p>	1,34
A	<p>US 6 407 777 B1 (DELUCA MICHAEL JOSEPH)</p> <p>18 June 2002 (2002-06-18)</p> <p>* Figs. 1-10 *</p>	1-49
A	<p>US 5 751 836 A (WILDES ET AL)</p> <p>12 May 1998 (1998-05-12)</p> <p>* Fig. 2b, col. 5 line 42-col. 9 line 52 *</p>	1-49

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